

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

66TH STREET AND YORK AVENUE
NEW YORK 21, N. Y.

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Professor A. J. Riker
Department of Plant Pathology
University of Wisconsin
Madison 6, Wisconsin

Dear Prof. Riker:

This is in answer to your recent letter concerning Dick Klein's studies on the transformation of avirulent to virulent bacteria with the use of DNA derived from the virulent type. Truthfully, I am very confused at the moment and I would certainly welcome a confirmation of that work from another source, if it is correct. I had attempted on three occasions to confirm Dick's results with the use of "bactrins" derived from three virulent cultures (B₆, A₆, BR) and tested against two avirulent strains (IIBNV₆ and Radiobacter) of bacteria. The results of these experiments were invariably negative. Similar studies were carried out with filtrates of five-week old tomato tumors in which the two avirulent strains were permitted to grow in accord with Klein's directions. The results of these experiments were also negative. Since Dick used a different virulent strain than I had used, I suspected that the difference in our results may have been accounted for by the fact that my donor strains were not suitable. Upon request, Dick kindly sent me his virulent strain and I carried out both experiments again. The results were negative.

About that time Dick moved to New York, and I had occasion to speak to him at length concerning his results not only on this phase of the work but also on his reported transformation of normal host cells to tumor cells by filtrates of the crown gall bacterium. The latter studies were of great interest to me and since, despite several attempts, I could not confirm them, I asked Dick if he would be so kind as to carry out the experiments in my laboratory. This he did. Unfortunately, in these studies the material was found after filtration to be contaminated with very few crown gall bacteria. Upon testing this material on tomatoes it was found that tumors were initiated on about twenty per cent of the plants. The resulting overgrowths in all instances developed below the cut stem surface and appeared very similar to those described by Dick in his talk at Brookhaven. A few appeared to be bacteria-free.

During the time of Dick's visit to my laboratory we also considered the problem of the transformation of avirulent to virulent types. We went over his procedure step by step to be certain that it was being carried out correctly here. I again performed the experiments and the

results were uniformly negative. Since that time Dick has informed me that he has again succeeded in obtaining the transformation of avirulent to virulent types with the use of a "bactrin." I am now really at a loss to know what to think. It is very difficult to see how Dick can be wrong since he has repeatedly obtained the results with the use of a number of methods. Yet it has not been possible for me to obtain a transformation in a single instance. I shall, therefore, be very much interested to learn whether it will be possible for you to confirm Dick's interesting findings.

I am not planning to attend the Botanical Congress in Paris this summer. However, since you and Mrs. Riker expect to be in the vicinity of New York in June, I hope that it will be possible for you to pay us a visit.

With best wishes, I am

Sincerely yours,



Armin C. Braun.

ACB:R